

An alar cartilage hematoma in a 10-year-old child

Anne-Sophie Bonte¹ , Chloé Kastoer^{1,2} , Olivier M. Vanderveken^{1,2} , Diane Van Rompaey² , Klara Van Gool² , Jozef Claes² 

¹University of Antwerp Faculty of Medicine and Health Sciences, Antwerp, Belgium

²Department of Otorhinolaryngology & Head and Neck Surgery, Antwerp University Hospital, Antwerp, Belgium

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ABSTRACT

Nasal trauma plays a large role in the field of craniofacial trauma. Besides nasal bone fractures, nasal trauma can also cause damage to cartilaginous or soft tissues. A subperichondrial hematoma is mainly found at the level of the nasal septum. In exceptional cases, a hematoma develops at the level of the alar cartilage. We present the case of a 10-year-old girl presenting to the emergency department after nasal trauma with epistaxis and significant nasal edema. She was diagnosed with single-sided nasal alar cartilage hematoma after 6 days by an ear, nose, and throat specialist. To conclude, proper management consists of early recognition, drainage of the hematoma, and antimicrobial therapy to prevent cosmetic and functional deformities. It is important to

Keywords: Nasal alar cartilage, nasal trauma, quilted sutures, septal hematoma

Introduction

Nasal bones are the most frequently fractured facial bones owing to their prominent position in the facial skeleton (1). Besides nasal bone fractures, nasal trauma can also cause damage to cartilaginous or soft tissues. Hematomas are mainly found in the septum. Particularly when left untreated, these can result in complications, such as nasal septum perforation, saddle nose deformity, and secondary infection. In exceptional cases, the hematoma does not develop at the level of the septum but at the alar cartilage (2, 3). The authors present a very rare case of a hematoma of the nasal alar cartilage.

Case Presentation

A 10-year-old girl came to the emergency department after falling face down on a bench followed by self-limiting severe epistaxis. There was no loss of consciousness and no signs of cerebral concussion. Her vital parameters were stable. External and internal assessment of the nose showed significant swelling but no sign of nasal septum hematoma. It was decided that medical imaging should not be performed. She was discharged and advised to see an ear nose and throat specialist after 5 days. Verbal informed consent was obtained from the patient who agreed to take part in the study.

By that time, her parents had noticed that her nasal asymmetry persisted (Figure 1 and 2). Edema between the right alar

lobule and the nasal tip became more obvious in the days after trauma. She had spontaneous complaints of nasal obstruction. On clinical examination, a hematoma under the right eye and edema at the right side of the nose were obvious, but there was no palpable nose fracture. Anterior rhinoscopy showed an abnormal bulging of the alar cartilage of the right nasal ves-



Figure 1. Six days after nasal trauma: asymmetric nose (right alar crease filled with edema)

Corresponding Author: Anne-Sophie Bonte, Anne-sophie.bonte@student.uantwerpen.be

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Figure 2. Six days after nasal trauma: bulging blueberry-like structure visualized through the right nostril

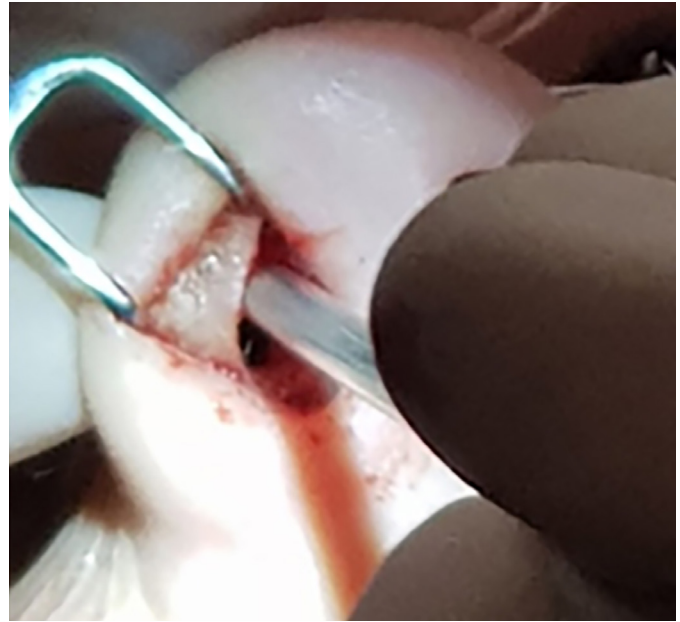


Figure 4. Suction cleaning



Figure 3. Perioperative procedure: after incision, a hematoma was visible



Figure 5. Application of sterile surgical glove drain

tibule. On the basis of these findings, it was decided that an exploration of the bulging abnormality in the nasal vestibule be performed under general anesthesia. An organized hematoma in the scroll area was visualized on incision and drained

Main Points:

- The diagnosis of nasal (alar) cartilage hematoma or abscess must be considered in all children having an acute onset of nasal obstruction and a history of a recent nasal trauma.
- Early recognition and urgent surgical treatment are paramount.
- The use of nasal packing or quilted sutures are advised to prevent re-accumulation of hematoma.

(Figure 3 and 4). The lateral crus of the alar cartilage was fully inspected. The cartilage showed no signs of trauma, infection, or necrosis. Finally, a sterile surgical glove drain (Figure 5) and tamponade (Merocel, Medtronic Inc., Minneapolis, MN, USA) (Figure 6) were left behind, and amoxicillin/clavulanic acid prophylaxis was prescribed. No sutures were used.

Six days after the surgery, the patient was symptom free, but still, a slight edematous right alar crease and induration were present. Ultrasound revealed an ill-delineated submucosal mass at the transition from alar cartilage to upper lateral cartilage that measured 11x4x8 mm corresponding with progressive scarring. Because no abscess or hematoma was visualized during the ultrasound, a watchful waiting policy was maintained. The patient could breathe normally, and there were no



Figure 6. Perioperative procedure: Merocel as nasal packing

functional complaints. Aesthetically, there was a bulging at the level of the right ala, resulting in a slight asymmetry of the nasal tip.

Discussion

Nasal trauma plays a large role in the field of craniofacial trauma. Cartilage damage is among the most important secondary effects of nasal trauma. Damaged cartilage may lead to the laceration of blood vessels within the perichondrium, which in turn gives rise to a subperichondrial hematoma (3). In children, the nasal cartilage is even more vascularized and less ossified. Therefore, children are more prone to develop a subperichondrial hematoma than adults. In the case of a subperichondrial hematoma, the risk exists that the cartilage is deprived of its nutritional support and may quickly become resorbed, even in the absence of infection. Untreated, it may lead to deformities, such as a saddle nose or a septum perforation. In addition, a secondary infection may also occur, resulting in an abscess and rapid resorption of necrotic cartilage and potentially life-threatening spread of the infection to the intracranial space (4, 5).

For this reason, early recognition and urgent surgical treatment are emphasized in the literature (6). This should be combined with prophylactic antibiotics.

One of the complications after the drainage of chondral hematomas is the recollection of fluid (4, 7, 8). Therefore, quilted sutures are used in the treatment of nasal septum hematoma and otohematoma. The management of an otohematoma consists of a tie-through compression mattress suture with bolster dressing (9). The quilted sutures of a nasal alar cartilage hematoma are based on the same principle. There are even studies that prefer quilted sutures over nasal packing because fewer complications would occur, such as synechia, crusting, and infection (8, 10).

Because a nasal alar cartilage hematoma is so rare, there are no separate guidelines. Several case reports provide narrative descriptions of surgical techniques, suggesting rim incision and intercartilaginous incision (8, 10). Afterward,

drainage of the organized hematoma and evacuation of the necrotic alar cartilage should be performed. Eventually, 24-hour packing of the vestibule postoperatively is recommended. In one case, a small drain was left in situ for 48 hours (8, 10).

Few case reports regarding alar cartilage hematoma are described in the literature owing to its extremely rare occurrence in practice. However, the requirement for the diagnosis of such hematoma is similar to that of a septal hematoma, including the awareness of its existence by the physician involved (3, 11). The diagnosis of a nasal (alar) cartilage hematoma or abscess must be considered in all children having an acute onset of nasal obstruction and a history of a recent nasal trauma (12). In addition, all patients should also be assessed for epistaxis, fractures, and cerebrospinal fluid leakage (13). In this case, no quilted sutures were placed. Owing to the rarity and lack of guidelines, it is difficult to say whether this was necessary. In other cases, the alar cartilages were sutured to maintain their continuity on the basis of the management of septal hematoma and otohematoma (3, 5).

Proper management consists of early recognition, drainage of the hematoma, and antimicrobial therapy (14). In addition, it is important to prevent reaccumulation using nasal packing or quilted sutures.

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References

1. Boswell KA. Management of facial fractures. *Emerg Med Clin N Am* 2013; 31: 539-41. [\[CrossRef\]](#)
2. Chintale SG, Kirdak VR, Jathale SP and Shaik KA. Nasal alar hematoma: an uncommon case report. *M J Otol* 2017; 1: 001.
3. Meehan T, Kaddour H, Lannigan F. Alar cartilage haematoma. *J Laryngol Otol* 1994; 108: 500-2. [\[CrossRef\]](#)
4. Sanyaolu LN, Farmer SE, Cuddihy PJ. Nasal septal haematoma. *BMJ (Clinical research ed)*. 2014; 349: g6075. [\[CrossRef\]](#)
5. León MA, Cárdenas-Camarena L. Deforming posttraumatic hematoma of the nasal tip: an infrequent lesion. *Plast Reconstr Surg* 2004; 113: 641-4. [\[CrossRef\]](#)
6. Green KMJ, Board T, Mason JD. Alar haematoma. *J Laryngol Otol* 1999; 113: 1104-5. [\[CrossRef\]](#)
7. Dreizin D, Nam AJ, Diaconu SC, Bernstein MP, Bodanapally UK, Munera F. Multidetector CT of midfacial fractures: classification

- systems, principles of reduction, and common complications. Radiographics. 2018; 38: 248-74. [\[CrossRef\]](#)
8. Ahmed S. Modified Quilting Sutures: A New Technique for Hematoma and Abscess of Nasal Septum. JCPSP 2016; 26: 531-2.
 9. Dalal PJ, Purkey MR, Price CPE, Sidle DM. Risk factors for auricular hematoma and recurrence after drainage. Laryngoscope 2020; 130: 628-31. [\[CrossRef\]](#)
 10. Thapa N, Pradhan B. Postoperative complications of septal quilting and BIPP packing following septoplasty. J Nepal Health Res Counc 2011; 9: 186-8.
 11. Arnstead N, Chan Y, Kilty S, et al. Choosing wisely Canada rhinology recommendations. J of Otolaryngol - Head & Neck Surg 2020; 49: 28 Feb 2020. [\[CrossRef\]](#)
 12. Canty PA, Berkowitz RG. Hematoma and abscess of the nasal septum in children. Arch of otolaryngol - Head & Neck Surg 1996; 122: 1373-6. [\[CrossRef\]](#)
 13. Michael D, Puricelli RPZ. Septal hematoma following nasal trauma. J Emerg Med 2016; 50: 121-2. [\[CrossRef\]](#)
 14. Kass JI, Ferguson BJ. Treatment of hematoma of the nasal septum. N Engl J Med 2015; 372: e28. [\[CrossRef\]](#)